

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q92973

Mitsuru YAMAMOTO, et al.

Appln. No.: 10/566,580

Group Art Unit: 3746

Confirmation No.: 5128

Examiner: Not Yet Assigned

Filed: January 31, 2006

For: DIAPHRAGM PUMP AND COOLING SYSTEM WITH THE DIAPHRAGM PUMP

REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT

ATTN: Office of Initial Patent Examination

Filing Receipt Correction

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

We enclose a copy of the Official Filing Receipt for the above-identified application and request the following correction:

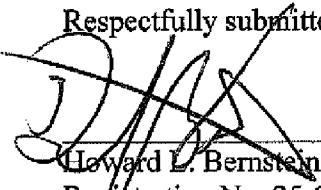
Please correct the **TOT CLMS** section of the Official Filing Receipt as shown below.

TOT CLMS

40 13

Verification for the requested correction is indicated on the Preliminary Amendment, filed January 31, 2006, a copy of which is submitted herewith.

Respectfully submitted,


Howard L. Bernstein
Registration No. 25,665

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: April 13, 2007



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPL NO.	FILING OR 371 (C) DATE	ART UNIT	FIL FEE RECD	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/566,580	01/31/2006	3746	1260	Q92973	8	10	13

DOCKETED

23373
 SUGHRUE MION, PLLC
 2100 PENNSYLVANIA AVENUE, N.W.
 SUITE 800
 WASHINGTON, DC 20037

DEC 05 2006

CONFIRMATION NO. 5128

FILING RECEIPT



OC000000021389365

Date Mailed: 11/30/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Mitsuru Yamamoto, Minato-ku, JAPAN;
 Yasuhiro Sasaki, Minato-ku, JAPAN;
 Atsushi Ochi, Minato-ku, JAPAN;
 Sakae Kitajo, Minato-ku, JAPAN;

Power of Attorney: The patent practitioners associated with Customer Number 23373.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP04/10339 07/21/2004

Foreign Applications

JAPAN 2003-285915 08/04/2003

If Required, Foreign Filing License Granted: 11/28/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/566,580**

Projected Publication Date: 03/08/2007

Non-Publication Request: No

Early Publication Request: No

Title

Diaphragm pump and cooling system with the diaphragm pump

Preliminary Class

417

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER Title 35, United States Code, Section 184 Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted

under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)), the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q92973

Mitsuru YAMAMOTO, et al.

Appln. No.: Not Yet Assigned

Confirmation No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Filed: January 31, 2006

Examiner: Not Yet Assigned

For: DIAPHRAGM PUMP AND COOLING SYSTEM WITH THE DIAPHRAGM PUMP

PRELIMINARY AMENDMENT

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Prior to examination, please amend the above-identified application as follows on the accompanying pages.

TABLE OF CONTENTS

AMENDMENTS TO THE SPECIFICATION.....	2
AMENDMENTS TO THE CLAIMS	3
REMARKS	7

Preliminary Amendment
National Stage Entry of PCT/JP2004/010339

AMENDMENTS TO THE SPECIFICATION

Amend the specification by adding before the first line the sentence:

This application claims priority from PCT Application No. PCT/JP2004/010339 filed July 21, 2004 and from Japanese Application No. 2003-285915 filed August 4, 2003, which applications are incorporated herein by reference.

Preliminary Amendment
National Stage Entry of PCT/JP2004/010339

AMENDMENTS TO THE CLAIMS

This listing of claims, which is based on Article 34 amendments, will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) A diaphragm pump comprising:
a pressure chamber formed into a flat shape and is filled up with liquid;
a suction side flow passage and a discharge side flow passage disposed at both ends of the pressure chamber so that axes thereof are aligned with each other and are connected with the pressure chamber;

at least one groove formed in a peripheral wall of the pressure chamber and for accelerating a flow of the liquid downstream in a flow direction; and

at least one diaphragm disposed on at least one of an upper surface and a lower surface of the pressure chamber and for oscillation to make a volume of the pressure chamber variable.

2. (Original) The diaphragm pump according to Claim 1, wherein the groove has a part with an opening in the upper surface facing the pressure chamber, into which the liquid flows, and a side part with an opening opened to a peripheral wall surface of the pressure chamber, from which the liquid is discharged downstream in the flow direction.

Preliminary Amendment

National Stage Entry of PCT/JP2004/010339

3. (Original) The diaphragm pump according to Claim 1 or 2, wherein the groove is extended in a radial direction while a point in the vicinity of an entrance of the discharge side flow passage is set as the center.

4. (Currently Amended) The diaphragm pump according to any one of Claims 1 to 3 Claims 1 or 2, wherein the axes are positioned at the center of a cross-sectional shape of the pressure chamber in a surface orthogonal to the axes.

5. (Currently Amended) The diaphragm pump according to any one of Claims 1 through 4 Claims 1 or 2, wherein each cross-sectional shape of the pressure chamber, the suction side flow passage, and the discharge side flow passage in a surface orthogonal to the axes are formed in an approximate rectangle.

6. (Original) The diaphragm pump according to Claim 5, wherein a lower surface of the pressure chamber and the lower surfaces of the suction side flow passage and the discharge side flow passage are formed on the same surface.

7. (Currently Amended) The diaphragm pump according to any one of Claims 1 through 6 Claims 1, 2 or 6, wherein a length of the pressure chamber viewed from an upper

Preliminary Amendment

National Stage Entry of PCT/JP2004/010339

surface in a direction orthogonal to the axes is continuously shortened toward the suction side

flow passage or the discharge side flow passage.

8. (Currently Amended) The diaphragm pump according to any one of ~~Claims 1~~
through ~~7~~ Claims 1, 2 or 6, wherein a height of the pressure chamber is continuously lowered
toward the suction side flow passage or the discharge side flow passage.

9. (Currently Amended) The diaphragm pump according to any one of ~~Claims 1~~
through ~~8~~ Claims 1, 2 or 6, further comprising:

check valves, respectively disposed on the suction side flow passage and the
discharge side flow passage, at least one of the check valves being tilted relative to a direction of
the axes.

10. (Currently Amended) The diaphragm pump according to any one of ~~Claims 1~~
through ~~9~~ Claims 1, 2 or 6, further comprising:

at least one intake opened to an upper surface of the suction side flow passage and
to introduce bubbles mixed in the liquid; and

a sealed space connected with the intake and to collect the introduced bubbles.

Preliminary Amendment

National Stage Entry of PCT/JP2004/010339

11. (Original) The diaphragm pump according to Claim 10, wherein the intake is positioned in the suction side flow passage upstream relative to the check valve.

12. (Currently Amended) The diaphragm pump according to any one of Claims 1 through 11 ~~Claims 1, 2, 6 or 11~~, wherein the diaphragm is a piezoelectric oscillator driven by a piezoelectric element.

13. (Currently Amended) A cooling system comprising:
the diaphragm pump according to any one of ~~Claims 1 through 12~~ Claims 1, 2, 6 or 11; and

a closed-structure flow passage for circulating liquid discharged from the discharge side flow passage in the diaphragm pump and for returning the liquid to the suction side flow passage.

Preliminary Amendment
National Stage Entry of PCT/JP2004/010339

REMARKS

Entry and consideration of this Amendment are respectfully requested.

Respectfully submitted,


Howard L. Bernstein
Registration No. 25,665

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 31, 2006